
 Substitute Form PTO-1449  
 (Modified)

 U.S. Department of Commerce  
 Patent and Trademark Office

 Attorney's Docket No.  
 07917-062002

 Application No.  
 09/784,985

**Information Disclosure Statement  
 by Applicant**

(Use several sheets if necessary)

 Applicant  
 Hagan Bayley et al.

 Filing Date  
 February 15, 2001

Group Art Unit

**U.S. Patent Documents**

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
an	AA	H201	01/06/1987	Yager	436	151	
an	AB	4,867,973	09/19/1989	Goers et al.	424	181.1	
an	AC	4,975,278	12/04/1990	Senter et al.	424	178.1	
an	AD	5,777,078	07/07/1998	Bayley et al.	530	350	

**Foreign Patent Documents or Published Foreign Patent Applications**

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
an	AE	0 185 076 B1	08/05/1992	Europe	—	—		
an	AF	WO 94/25616	11/10/1994	WIPO	—	—		

**Other Documents (include Author, Title, Date, and Place of Publication)**

Examiner Initial	Desig. ID	Document
an	AG	Adams et al., "Controlling Cell Chemistry with Caged Compounds," 1993, Annu. Rev. Physiol., 55:755-84.
an	AH	Amato, "Molecular Design Gets Into a Hole," 1992, Science, 255:684.
an	AI	Avila et al., "A New Immunotoxin Built by Linking a Hemolytic Toxin to a Monoclonal Antibody Specific for Immature T Lymphocytes," 1988, Int. J. Cancer, 42:568-71.
an	AJ	Avila et al., "A Carcinoembryonic Antigen-Directed Immunotoxin Built by Linking a Monoclonal Antibody to a Hemolytic Toxin," 1989, Int. J. Cancer, 43:926-29.
an	AK	Bayley, "Self-Assembling Biomolecular Materials in Medicine," 1994, J. Cell. Biochem., 56:168-70.
an	AL	Bayley, "Channels With Single Transmembrane Segments," 1994, News in Physiological Sciences, 9:45-46.
an	AM	Bayley, "Photoactivatable Drugs," 1987, Trends in Pharmacol. Sciences, 8:138-43.
an	AN	Bayley, "Triggers and Switches in a Self-Assembling Pore-Forming Protein," 1994, J. Cell. Biochem., 56:177-82.
an	AO	Bayley, "Novel Biomaterials: Genetically Engineered Pores," 1990, Dept. of Energy Grant No. DE-FG02-90R20018, Worcester Found, for Exptl. Biol.
an	AP	Boman, "Antibacterial Peptides; Key Components Needed in Immunity," 1991, Cell, 65:205-207.
an	AQ	Bowie et al., "Deciphering the Message in Protein..." Science, 247:1306-1310, 1990
an	AR	Braha et al., "Designed Protein Pores as Components for Biosensors," 1997, Chemistry & Biology, 497-505. <i>Vol. 4, No. 7</i>
an	AS	Brennan et al., "A Molecular Sensor System Based on Genetically Engineered Alkaline Phosphatase," 1995, Proc. Natl. Acad. Sci. 92:5783-5787.

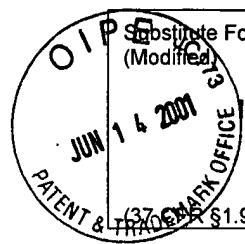
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*Alb. Noguera*

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cm	AT	Chang et al., "A Photogenerated Pore-Forming Protein," 1994, Chem & Biol., 2(6):391-400.
	AU	Cheley et al., "Type II Regulatory Subunits of cAMP-dependent Protein Kinase and Their Binding Proteins in the Nervous System of Aplysia californica," 1994, J. Biol. Chem., 269L:2911-20.
	AV	Chovnick et al., "A Recombinant Membrane-Acting Immunotoxin," 1991, Cancer Res., 51:465-467.
	AW	Cornell et al., "A Biosensor That Uses Ion-Channel Switches," 1997, Nature, 387:580-583. 5 June 1997
	AX	Dawson et al., "Synthesis of Proteins by native Chemical Ligation," 1994, Science, 265:776-79. Vol. 266 November 1997
an	AY	Durell et al., "Theoretical Models of the Ion Channel Structure of Amyloid $\beta$ -Protein," 1994, Biophys. J., 67:2137-45.
an	AZ	Egholm et al., "PNA hybridizes to Complementary Oligonucleotides Boeying the Watson-Crick Hydrogen-bonding Rules," 1993, Nature, 365:566-68.
an	AAA	Ellman et al., "Site-Specific Incorporation of Novel Backbone Structures into Proteins," 1992, Science, 255:197-200.
an	ABB	Ericksson et al., Crystallographic Studies of Inhibitor Binding Sites in Human Carbonic Anhydrase II: A Pentacoordinated Binding of the SCN Ion to the Zinc at High pH," 1988, Proteins: Structure, Function, and Genetics, 4:283-293.
	ACC	Goldmacher et al., "Photoactivation of Toxin Conjugates," 1992, Bioconjugate Chem., 3:104-107.
	ADD	Gouaux et al., "Subunit Stoichiometry of Staphylococcal $\alpha$ -hemolysin in Crystals and on Membranes; A Heptameric Transmembrane Pore," 1994, Proc. Natl. Acad. Sci. USA, 91:12828-31.
	AEE	Gray et al., "Primary Sequence of the Alpha Toxin Gene from Staphylococcus Aureus Wood 46," 1984, Infect. Immun., 46:615-618.
	AFF	Hanke et al., "Planar Lipid Bilayers" 1993, Academic Press., Table of Contents
	AGG	Harris et al., "Therapeutic Antibodies-the Coming of Age," 1993, TIBTECH, 11:42-44. RECEIVED FEB 20 1997
	AHH	Hazum et al., "A Photocleavable Protecting Group for the Thiol Function of Cysteine," 1980, Peptides 1980: Proceedings of Sixteenth European Peptide Symposium, pp. 105-106.
	AII	Hilvert, "Extending the Chemistry of Enzymes and Abzyes," 1991, Trends Biotechnol., 9:11-17.
	AJJ	Hird et al., "Immunotherapy with Monoclonal Antibodies," 1990, Genes and Cancer, 17:184-189.
	AKK	Huennekens, "Tumor targeting: activation of prodrugs by enzyme-monoclonal antibody conjugates," 1994, TIBTECH., Vol. 12.
	ALL	Huston et al., "Protein Engineering of Single-Chain Fv Analogs and Fusion Proteins" 1991, Methods In Enzymology., 203:46-89.
	AMM	Ippolito et al., "Structure-assisted Redesign of a Protein-Zinc-Binding Site with Femtomolar Affinity," 1995 Proc. Natl. Acad. Sci., 92:5017-5021.
	ANN	Kasianowicz et al., "Genetically Engineered Pores as Metal Ion Biosensors," 1994, Mat. Res. Soc. Symp. Proc. 330:217-23.
	AOO	Koltchine et al., "Homomeric Assemblies of NMDAR1 Splice Variants are Sensitive to Ethanol," 1993, Neuroscience Letters, 152:13-16.
an	APP	Kraules, P.J., "MOLSCRIPT" A Program To Product Both Detailed and Schematic Plots of Protein Structures." 1991, J. Appl. Cryst., 24:946-950.

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Alb. Hager

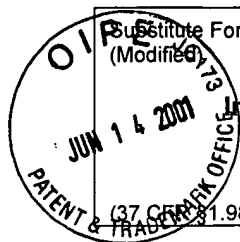
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Am	AQQ	Krishnasastri et al., "Surface Labeling of Key Residues During Assembly of the Staphylococcal $\alpha$ -Hemolysin," 1994, FEBS Letters, 356:66-71.
	ARR	Liotta et al., "Cancer Metastasis and Angiogenesis: An Imbalance of Positive and Negative Regulation," 1991, Cell, 64:327-36.
	ASS	Lipkin, "Controlling Life's Gateway Opening and Closing Cell Membranes on Demand," 1994, Science News, 146:204-205.
	ATT	Maiti et al., "Tolerogenic Conjugates of Xenogeneic Monoclonal Antibodies with Monomethoxypolyethylene Glycol. I. Induction. Xenogeneic Monoclonal Antibodies," 1988, Int. J. Cancer, 3:17-22.
	AUU	Marriott et al., "Photomodulation of the Nucleating Activity of a Photocleavable Crosslinked Actin Dimer," 1992, Biochemistry International, 26:943-951.
	AVV	Merritt et al., "Raster3D Version 2.0. A Program for Photorealistic Molecular Graphics," 1994, Biological Crystallography, D50:869-873.
	AWW	Montal et al., "Formation of Bimolecular Membranes from Lipid Monolayers and a Study of Their Electrical Properties," Proc. Nat. Acad. Sci. USA, 69:3561-3566.
	AXX	Murray, "Cyclin-dependent kinases: regulators of the cell cycle and more," 1994, Chemistry & Biology, 1:191-195.
Am	AYY	Nielsen et al., "Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Polyamide," 1991, Science, 254:1497-1500.
Am	AZZ	Ngo et al., "The Protein Folding Problem and Tertiary...", pp. 491-495, Eds.: Mertz and Le Grand; Birkhauser, Boston, 1994
Am	AAAA	Noren et al., "A General Method for Site-Specific Incorporation of Unnatural Amino Acids into Proteins 1989, Science, 244:182-188.
Am	ABBB	Olejnik et al., "Photocleavable biotin derivatives: A Versatile Approach For the Isolation of Biomolecules," 1995, Proc. Natl. Acad. Sci. USA, 92:7590-7594.
Am	ACCC	O'Reilly et al., "Angiostatin: A Novel Angiogenesis Inhibitor That Mediates the Suppression of Metastases by a Lewis Lung Carcinoma," 1994, Cell, 79:315-328.
Am	ADDD	Osband et al., "Problems in the Investigational Study and Clinical Use of Cancer Immunotherapy," 1990 Immunology Today, 11:193-95.
Am	AEEE	Panchal et al., "Differential Phosphorylation of of Neuronal Substrates by Catalytic Subunits of cAMP-dependent Protein Kinase with Alternative N Termini," 1993, J. Biol. Chem., 269:23722-23730.
Am	AFFF	Pastan et al., "Immunotoxins," 1986, Cell 47:641-648.
	AGGG	Pederzoli et al., "Biochemical and Cytotoxic Properties of Conjugates of Transferrin with Equinatoxin II, a Cytolysin from a Sea Anemone," 1994, Bioconjugate Chem., 6:166-173.
	AHHH	Regen et al., "Supramolecular Surfactants: Amphiphilic Polymers Designed to Disrupt Lipid Membranes," 1989 Biochem. and Biophys. Res. Comm., 159:566-571.
	AIII	Senter et al., "Novel Photocleavable Protein Crosslinking Reagents and Their Use in the Preparation of Anti-body-Toxin Conjugates," 1985, Photochemistry and Photobiology, 42:231-237.
	AJJJ	Song et al., Structure of Staphylococcal $\alpha$ Alpha Toxin-Recent Advances," 1988, Toxicon, 26:51-65.
Am	AKKK	Stetler et al., "The Activation of Human Type IV Collagenase Proenzyme" 1989, The Activation of Human IV Collagenase Proenzyme," 264:1353-1356.

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*Ally Haggard*

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Substitute Disclosure Form (PTO-1449)

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A	ALLL	Thelestam et al., "Staphylococcal Alpha Toxin - Recent Advances," 1988, TOXICON, 26:51-65
	AMMM	Thiele and Fahrenholz, "Photocleavable Biotinylated Ligands for Affinity Chromatography," 1994, Analytical Biochemistry, 218:330-337.
	ANNN	Thompson et al., "Photocleavable Nitrobenzyl-Protein Conjugates," 1993, Biochem. and Biophys. Res. Comm., 201:1213-1219.
	AOOO	Thompson et al., "Enzyme-Based Fiber Optic Zinc Biosensor," 1993, American Chemical Society., 65:730-734.
	APPP	Tobkes et al., "Secondary Structure and Assembly Mechanism of an Oligomeric Channel Protein," 1985, Biochemistry, 24:1915-1919.
	AQQQ	Vivaudou et al., "Skeletal Muscle ATP-Sensitive K <sup>+</sup> Channels Recorded from Sarcolemmal Blebs of Split Fibers: ATP Inhibition is Reduced by Magnesium and ADP," 1991, J. Membrane Biol., 122:165-175
	ARRR	Walker et al., "Restoration of pore-forming activity in staphylococcal $\alpha$ -hemolysin by targeted covalent modification," 1995, Protein Engineering, 8:491-495.
	ASSS	Walker et al., "Genetically-Engineered Protease-Activated Triggers in a Pore-Forming Protein," 1994 Mat. Res. Soc. Symp. Proc., 330:209-215.
	ATTT	Walker et al., "An intermediate in the Assembly of a Pore-Forming Protein Trapped with a Genetically-Engineered Switch," 1995, Chemistry & Biology, 2:99-105.
	AUUU	Walker et al., "A pore-forming Protein with a Metal-Actuated Switch," 1994, Protein Engineering, 7:655-662
An	AVVV	Walker et al., "A pore-forming protein with a protease-activated trigger," 1994, Protein Engineering, 7:91-97.
A	AWWW	Walker et al., "Assembly of the Oligomeric Membrane Pore Formed by Staphylococcal $\alpha$ -Hemolysin Examined by Truncation Mutagenesis," 1992, J. Biol. Chem., 267:21782-21786.
A	AXXX	Walker et al., "Functional Expression of the $\alpha$ -Hemolysin of Staphylococcus Aureus in Intact Escherichia Coli and in Cell Lysates," 1992, J. Biol. Chem., 267:10902-10909.
An	AYYY	Walker et al., "Functional Complementation of Staphylococcal $\alpha$ -Hemolysin Fragments," 1993, J. Biol. Chem., 268:5285-5292.
A	AZZZ	Walker et al., "Key residues for membrane binding, oligomerization...", J. Biol. Chem., 270:23065-23071
An	AAAAA	Wells, "Additivity of Mutational Effects in Proteins," Biochemistry, 29:8509-8517-1990
An	ABBBB	Wittung et al., "DNA-like double helix formed by peptide nucleic acid," 1994, Nature, 368:561-563 April 7, 1994
An	ACCCC	Zorn et al., "Halothane Acts on Many Potassium Channels, Including a Minimal Potassium Channel," 1993, Neuroscience Letters, 161:81-84.

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